



## Draft Fast Flux Test Facility Environmental Assessment (EA) for Proposed Sodium Residuals Reaction/Removal and Other Deactivation Work Activities

U.S. Department of Energy - U.S. Department of Energy - U.S. Department of Energy

*The U.S. Department of Energy (USDOE) would like your input on a Draft National Environmental Policy Act (NEPA) Environmental Assessment (EA). This document evaluates the potential environmental impacts of proposed deactivation work activities associated with the reaction and removal of Fast Flux Test Facility (FFTF) Project sodium residuals. The Draft EA also describes several other associated deactivation activities.*

*This Draft EA does not address decommissioning activities i.e., final end state of the facility. That scope of work will be addressed in the Tank Closure and Waste Management Environmental Impact Statement.*

### Background

The FFTF is a DOE-owned, formerly-operating 400 megawatt (thermal) liquid-metal cooled research reactor located in the 400 Area of the Hanford Site. Built in the 1970's, it was used between 1982 and 1992 to develop and test advanced nuclear fuels, materials, equipment, and reactor safety designs for the Liquid Metal Fast Breeder Reactor Program. The FFTF was used in ancillary experimental activities to produce a variety of medical isotopes. In December 1993, DOE decided not to further operate FFTF due to a lack of an economically-viable mission at that time and ordered shutdown of the facility. In May 1995, DOE prepared the final EA (DOE/EA-0993, Shutdown of the Fast Flux Test Facility) that evaluated the potential impacts associated with actions to place the FFTF in a safe, permanent shutdown and deactivation condition. The EA proposed the sodium residuals remain in the main portions of the FFTF's piping and equipment, and be maintained in an inert gas atmosphere to prevent any chemical reactions during long-term surveillance and maintenance. DOE determined that an environmental impact statement was not required for the permanent shutdown and deactivation of the FFTF, and issued a NEPA Finding of No Significant Impact (FONSI) decision with the 1995 EA. Deactivation of the FFTF has been ongoing since that time consistent with the 1995 EA and FONSI.



Fast Flux Test Facility

### Scope of the Environmental Assessment

In this draft EA, DOE addresses a different approach to accomplish the ongoing deactivation work at FFTF that was not extensively discussed in the 1995 EA. DOE proposes to remove radioactively-contaminated sodium residuals left over from the drain of the Hanford Site radioactively-contaminated sodium inventory (i.e., FFTF, Hallam Reactor, and Sodium Reactor Experiment) by reacting the sodium metal with water (as superheated steam) to produce caustic sodium hydroxide; remove associated equipment/components to allow removal of the sodium; and remove, dispose, and stabilize miscellaneous hazards and waste streams left over from the sodium drain. These activities will further support low cost, environmentally-safe, surveillance and maintenance activities at the FFTF.

### Public Comment

The U.S. Department of Energy wants your feedback on the Draft Environmental Assessment.

The public comment period will run from **February 15 through March 17, 2006.**



# Fact Sheet

Some of the specific issues discussed in the document include:

- the use of the superheated steam process to remove sodium residuals. [Superheated steam is where steam is superheated well above the boiling point of water before being injected into the equipment/components (e.g., piping, valves, tanks, etc.) at controlled rates.]
- the locations where the reaction of sodium or sodium residuals associated with the sodium systems and equipment could be done (i.e., in-place or at designated cleaning locations), and
- the use of an alternative technology (s) in select situations for small-scale reaction of sodium residuals.

Other deactivation work activities discussed in this Draft EA include removal of associated equipment/components to facilitate removal of the sodium; and removal, disposition, and stabilization of miscellaneous hazards and waste streams resulting from the sodium drain.

These activities include:

- clean in-place vessels, components, and large-bore pipe (greater than or equal to 8-inch diameter) in primary and secondary sodium cooling systems
- remove small-bore pipe (less than 8-inch diameter), valves, and other components for reaction in a cleaning station
- remove large components for cleaning
- remove and package FFTF remote-handled special components (cesium trap, primary cold trap, and two vapor traps) for storage in the 400 Area pending final disposition
- remove/dispose of asbestos
- remove/stabilize existing hazards in conjunction with deactivating systems and equipment associated with sodium residuals
- remove/recycle/dispose excess deactivated equipment and components as necessary, and
- remove depleted uranium and/or lead shielding for recycling, reuse, or storage in the 400 Area.

## How you can become involved

A 30-day public comment period on the Draft Environmental Assessment (EA) will be held from **February 15 through March 17, 2006**. The USDOE wants your feedback on this Draft Environmental Assessment and will consider comments before finalizing it. Please submit comments to:

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*The document can be viewed online at <http://www.hanford.gov/public/calendar/>  
under the Public Comment Period section*

# Fact Sheet

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